

Local Emergency Plan

CENTER FOR FUNCTIONAL NANOMATERIALS LOCAL EMERGENCY PLAN

Building: 735

Occupancy: 50 - 75

Position	Name/Signature	Extension	Home Phone	Cell No.
Plan Preparer	Arthur Piper	5937	631-368-3432	631-258-5809
Building Manager	Arthur Piper	5937	631-368-3432	631-258-5809
Primary LEC	Arthur Piper	5937	631-368-3432	631-258-5809
Secondary LEC	Bob Sabatini	3509	631-886-1144	631-294-0778
ES&H Coordinator	Bob Sabatini	3509	631-886-1144	631-294-0778
Asst. ES&H Coordinator	Arthur Piper	5937	631-368-3432	631-258-5809
FSS Representative	Frank Zafonte	5565	631-929-3270	631-457-3793

Date Prepared: 4/4/2007

Frequency of Review: Periodically during the transition to operations period (until March 2008), then annually thereafter.

Date reviewed	Reviewed By	Review Type/Pages Changed
7/15/2007	Arthur Piper	General/3-5
3/3/2008	Arthur Piper	General/4-5
3/17/2008	Arthur Piper	General/3-5
6/4/2008	Arthur Piper	General/2-4
11/21/2008	Arthur Piper	General/2-6

Every facility should establish an effective program to respond to emergencies. For this to work, every employee should be prepared to handle emergencies before they arise. This document outlines the Employee Action Plan to address workplace emergencies.

TO REPORT A FIRE, SPILL, MEDICAL OR OTHER EMERGENCY, DIAL 911 OR 2222. IF USING A CELL PHONE, DIAL 631-344-2222. IF A TELEPHONE IS NOT AVAILABLE, USE A FIRE ALARM BOX.

Every employee should familiarize themselves with exits in their workplaces, including a second way out in case the main way is blocked.

[illegible]

The floor plan shows a complex layout with multiple rooms and corridors. The rooms are labeled with numbers 1 through 10. The plan includes a central corridor, a staircase area, and several large rooms. The exits are marked with red arrows and the text 'EXIT DOWN'.

All employees are expected to leave the building and report to the outdoor assembly area when the fire alarm bells ring. No one is authorized to remain in the facility during an emergency.

ACCOUNTABILITY FOR EMPLOYEES

Accountability for employees should be performed after an evacuation. Based upon direction given in an emergency, all employees must assemble at the appropriate areas.

- BUILDING INDOOR ASSEMBLY AREA: Laboratory 1L01
- BUILDING OUTDOOR ASSEMBLY AREA: West Parking Lot by Catch Basin/ Stone Wall
- SHELTER-IN-PLACE AREA: Laboratory 1L01
- PERSONNEL ACCOUNTABILITY: The LEC or designees will account for employees. The information must be given to Fire-Rescue or Police upon arrival.

SITE-EMERGENCY SIGNALS

- CONTINUOUS SOUNDING OF SITE SIRENS FOR FIVE MINUTES - Proceed immediately to the Indoor Building Assembly Area /Shelter in Place Area. Await instructions that may include the nature of the emergency, the type, sequence, and routes for evacuation.
- INTERMITTENT SOUNDING OF SITE SIRENS FOR FIVE MINUTES - Evacuate the Site Immediately.
- Tone Alert Radio: Zone 10

Location: Permanent mount at Main Fire Alarm Panel adjacent to main (North) entrance door. An additional TAR is stationed in the Local Emergency Coordinator's office (room # 2006).

Responsible Individual: Arthur Piper

FOR ADDITIONAL INFORMATION OR QUESTIONS, CONTACT THE
LOCAL EMERGENCY COORDINATOR

LOCAL EMERGENCIES AND SIGNALS

FIRE: Upon notice of fire or sounding of the alarm bells, proceed immediately to the Outdoor Assembly Area. Await instructions that may include the nature of the emergency, the type, sequence, and routes for further evacuation. When the fire alarm bells ring, a call should be made to the BNL Fire Rescue Group on extension 2222 (from a safe location), confirming their receipt of the alarm. Any information known about the condition that caused the alarm should be given at that time.

MEDICAL: Rescue and Medical Duties - Employees are expected to help minimize damage and assist personnel during an emergency to the best of their abilities and when their safety is not threatened. The BNL Fire Rescue Group is trained, equipped, and has the main responsibility to render emergency assistance. In the event of any medical emergency call extension 2222 or 911 (note: from a cell phone, call 631-344-2222).

SPECIFIC HAZARDS:

- Radiological – Shielded radiation generating devices (no fixed sources).
- Toxicological – Research with Nanomaterials, toxic gases, toxic chemicals
- Physical – Confined space in ME room air handler units, elevator pit and basement (pit).

- Other – Cryogenic liquids/compressed gases in laboratories/service chases. Hot surfaces in labs, service chases, ME rooms.
- Pyrophoric- Pyrophoric gases located in laboratory 1L17 and the Clean Room Service Galley.
- Flammable: Flammable liquids/gases located in labs/service chases.

OTHER INFORMATION

Training - The Department/Division must designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees for this facility. They are as follows:

1. Name: Arthur Piper, Cell # 631-258-5809
2. Name: Bob Sabatini, Cell # 631-294-0778
3. Name: Lorraine Davis, Cell # 631-275-6201
4. Dave Elling, Cell # 631-618-1949
5. Ed Baker, Cell # 631-618-1015

These personnel are responsible for reviewing the plan with each employee covered by the plan. This training occurs when the plan is initially developed; whenever the employee's responsibilities or designated actions under the plan change; and whenever the plan is changed.

Provide Fire/Rescue (Chief@bnl.gov) with one copy of this plan each time it is issued.

OPTIONAL INFORMATION

Description of Hazards

- A. The Center for Functional Nanomaterials facility requires a Local Emergency Plan for the following reasons.
 1. Compressed gas cylinders, some of which may contain flammable, toxic or pyrophoric gases, which have the potential to cause property damage or injury to personnel. Flammable gases are stored on the south side of the building in a Class 1/Division 1 approved bunker. Inert gases are stored on the loading dock in approved cylinder racks.
 2. Research conducted with nanomaterials. Nanomaterials are treated as hazardous substances, which may pose health and environmental risks if released (i.e.: if engineered controls failed).
 3. Lasers are present in select laboratories in the facility.
 4. Oil and hazardous material spills: Pump oils and solvents will be used in moderate quantities for work carried out in this facility. Pressurized steam systems present significant potential/thermal energy hazards under failure conditions.
 5. Pyrophoric gases located in Lab 1L17 and the clean room service galley (gases feed to clean room lab 1L43)
 6. Laboratory scale acids, including Hydrofluoric are used in several of the facilities.
- B. Building 735 contains a 90-day collection bunker room for hazardous waste.
This is located in the 90-day bunker room (room # 1034) located at the south end of the building, east of the loading dock (dedicated room for this purpose).

Emergency exits are located at the North (main) entrance, Northwest, West, Northeast, East, Southeast (from clean room service galley) and South locations of the main floor of the building. Emergency exit from the 2nd floor of the building to the 1st floor is through stairs, which are located in the center halls East & West , and the Southeast and Northwest corners of the building.

C. The types of emergencies that might affect this facility are

1. Operations

During normal operations, the emergencies that may affect this facility are

- a. Fire – A fire in this facility could result in property damage/personnel injury/fatality
The main fire hazard(s) is/are from Pyrophoric/flammable gases, electrical systems and combustible materials
- b. Explosions – Compressed gas cylinders may contain flammable or pyrophoric gases. Pressurized steam systems present significant potential/thermal energy hazards under failure conditions.
- c. Industrial Accidents - An industrial accident is possible in the Laboratories, service chases, mechanical equipment rooms, elevator pit, and basement (pit) areas. In these locations there are confined spaces, steam systems, electrical systems, compressed gases, lasers, cryogenic liquids/gases, and/or entrapment hazards present.
- d. Personnel Injury or Fatality - The greatest potential for personnel injury or fatality exists during maintenance/repairs of the building utility systems (eg: steam, electrical, etc)
During these operations, task specific procedures and/or work planning documentation are required to address safety concerns related to work on the utility systems.
Specific procedures for these operations are found in Plant Engineering MMC and/or CFN facility specific documents.
- e. Uncontrolled Release of Hazardous Materials - The possibility of an uncontrolled release of toxic / pyrophoric gases exists for this facility (if engineering controls were to fail).
- e. Personnel Exposure is a potential problem in the Laboratory's due to exposure to nanomaterials, toxic/pyrophoric gases (if engineering controls were to fail).
- h. Oil and Hazardous Material Spills - All chemicals in the 90-day waste bunker are stored in secondary containers capable of containing the full contents of the material in the event of a spill. In addition, spill kits are located in the 90-day bunker, service chase locations and the clean room service chase .
- I. Air and Water Pollution - This facility does not have any operations that allow permitted discharges to the water and air. Safety Systems have been set up in these operations to significantly minimize the likelihood of accidental discharge to the air or water.
- j. Accidental criticality: N/A
- k. Malevolent acts: Facility access will be controlled with card reader access systems and standard key control measures. The facility has video surveillance at the North, and North-East entrances for off-hours access monitoring. Video surveillance will be monitored at police headquarters.

2. This facility does not have quantities of chemicals in excess of SARA Threshold Planning Quantities (TPQ).

Building Emergency Equipment

(State below or on diagram the emergency equipment in the building, this information may be maintained elsewhere, but must be readily available to emergency responders. If maintained elsewhere, state its location).

A. Fire Protection

1. ABC fire extinguishers are located in the common areas with a maximum travel distance of 75 ft.
2. FE-36 Fire Extinguishers are located in the service chases and the clean room.

3. Three zone (1st floor/2nd floor/elevator equipment room) wet pipe sprinkler system throughout building.
4. Loading dock has dry pendant sprinkler heads to prevent freezing below ceiling level (area above ceiling is heated).
5. Standpipe system throughout building.
6. Smoke, duct smoke, laser beam detector (atrium ceiling), heat detector (elevator service room).
7. Fire alarm pull boxes are located at each exit
8. Standpipe connections are located on the north (outside) wall.

B. Emergency and Safety Related Equipment

1. Spill control products such as floor drain covers/oil absorbent mats, etc.; are located in the 90-day waste storage bunker, service chases and clean room service case.
2. Fire Alarm PA system is located at the main Fire Alarm Panel and is maintained and controlled by Plant Engineering/Emergency Services.
3. Safety showers and emergency eye wash stations are located in the service corridors outside the laboratories and within the laboratories.
4. Laboratory L17 and the Clean Room Service Galley have gas leak detection with local audible alarms. In the event of an alarm, leave/do not enter area, call 2222 immediately.

C. HVAC Shutdown procedure

1. Shutdown Exhaust fans (EF) 1, 2A, 2B
2. Shutdown Air Handler Units (AHU) 1, 2, 3, 4, 5